



MOON

Halogen

PR-2035H

This product manual contains important information about the safe installation and use of this projector. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

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Please note that as part of our ongoing commitment to continuous product development, specifications are subject to change without notice. Whilst every care is taken in the preparation of this manual we reserve the right to change specifications in the course of product improvement. The publishers cannot be held responsible for the accuracy of the information herein, or any consequence arising from them.

Every apparatus is tested completely and packed properly by the manufacturer. Please make sure the packing and / or the apparatus is in good condition before your installation and use. Should there be any damage caused by transportation, consult your dealer and do not use the apparatus. But any damage caused by improper use will not be assumed by the manufacturer and / or dealer.

ACCESSORIES

THESE ITEMS ARE PACKED TOGETHER WITH THE PROJECTOR

- Mounting Bracket (1 PCS), M8 Knob for mounting bracket (2 PCS)
- Power-cord (1 PCS), XLR plug (1 PCS), XLR socket (1 PCS)
- Safety cord (1 PCS)
- This manual (1 PCS)

INTRODUCTION

Thank you for purchasing the product MOON, PR-2035H.

This product manual contains important information about the safe installation and use of this projector. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

The MOON complies to CE norms and standards and uses international protocol DMX-512. The outline of housing is elegant, lovable and portable, which features its special character compared with conventional luminaire. It is convenient to hang the unit and the angle of the body is easy to be adjusted, and the unit even can be carried by hand. The MOON may be controlled by sound, auto programmes having been set or a controller, and it may be used as a stand-alone unit, linked with each other for multi-units synchronously running, or linked to a controller, so it is suitable for many different applications.

The projector features 9 dichroic colours and 7 rotatable gobos, and an independent adjustable strobe/shutter, and the colour wheel may produce rainbow effect when it rotates quickly.

The lamp brightness can be adjusted, and the lamp will be cut off automatically when the temperature is higher than the safety value, so it will effectively prolong the life of the lamp and the projector. It can be setup easily with the touch-switches and a digital display screen.

SAFE USAGE OF THE PROJECTOR

The following points are important for safety as well as for the smooth installation and performance of the unit

When unpacking and before disposing of the carton check there is no transportation damage before using the projector. Should there be any damage caused by transportation, consult your dealer and do not use the apparatus.



The projector is for Indoor use only, IP20. Use only in dry locations. Keep this device away from rain and moisture, excessive heat, humidity and dust. Do not allow contact with water or any other fluids, or metallic objects.

The projector is not designed or intended to be mounted directly on to inflammable surfaces.



The projector is only intended for installation, operation and maintenance by qualified personnel.

The projector must be installed in a location with adequate ventilation, at least 50cm from adjacent surfaces. Be sure that no ventilation slots are blocked.

Do not project the beam onto inflammable surfaces, minimum distance is 3m.  3m 

Avoid direct exposure to the light from the lamp. The light is harmful to the eye.

Do not attempt to dismantle and / or modify the projector in any way.

Electrical connection must only be carried out by qualified personnels.

Before installation, ensure that the voltage and frequency of power supply match the power requirements of the projector.

It is essential that each projector is correctly earthed and that electrical installation conforms to all relevant standards.

Do not connect this device to any dimmer pack.

Make sure that the power-cord is never crimped or damaged by sharp edges. Never let the power-cord come into contact with other cables. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

Keep the lamp clean. Do not touch the lamp glass with bare hand.

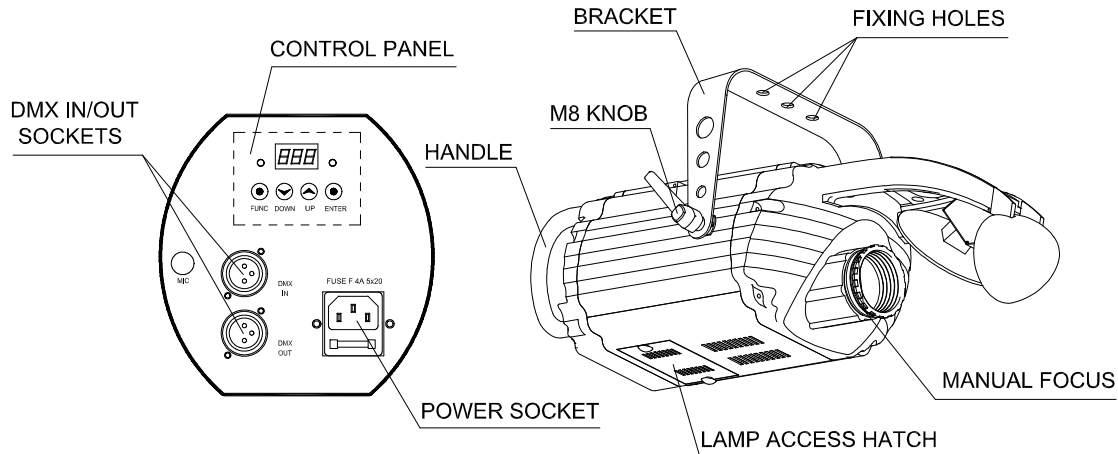
Never run the projector without a lamp.

There are no user serviceable parts inside the projector, do not open the housing and never operate the projector with the covers removed.

Always disconnect from the mains, when the device is not in use or before cleaning it or before attempting any maintenance work.

If you have any questions, don't hesitate to consult your dealer or manufacturer.

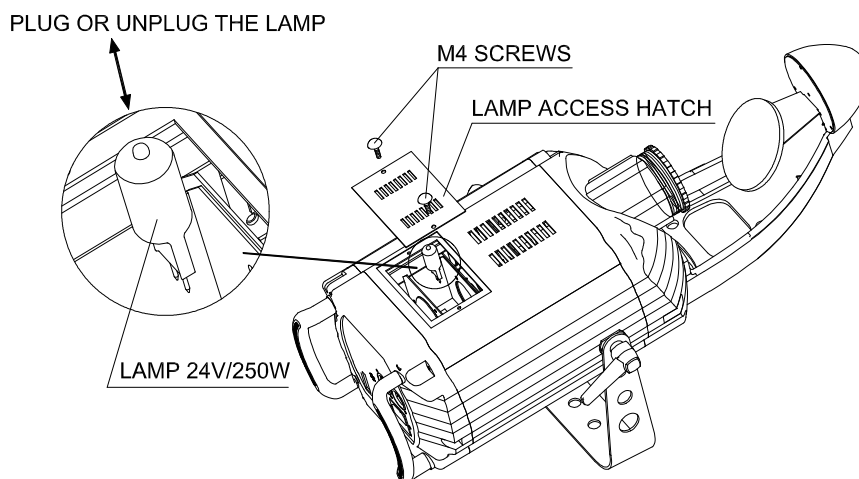
INSTALLING THE PROJECTOR



This unit has been designed to be hung. Mount the bracket provided on the body of the projector by 2 M8 knobs provided, then suspend the projector via its bracket using a M12 size bolt and a nut. When you want to adjust the angle of the body of the projector, you only loosen the two M8 knobs carefully and then adjust the angle of the body. After finishing that, it is recommended that you don't forget to retighten the two knobs. Always ensure that the projector is firmly positioned to avoid vibration and slipping, and always ensure that the structure to which you are attaching the projector is secure and is able to support a weight of 9.4Kg for each MOON.

For safety the unit should have a secondary fixing with a safety cable through the two handles on the back of the unit, and the safety cable should afford 10 times of the unit's weight.

FITTING THE LAMP



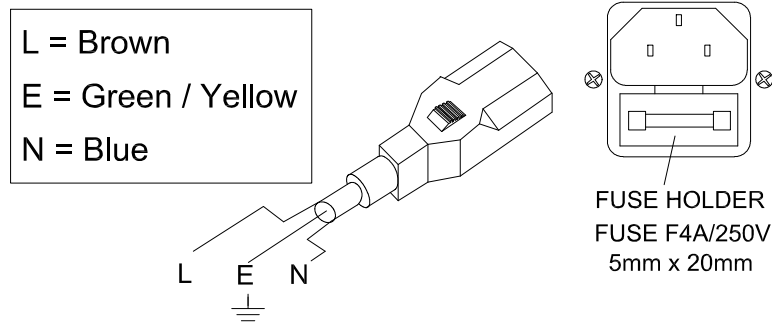
Remove the lamp access hatch by loosening the 2 M4 screws.

Insert an EVC 24V/250W lamp in the lamp porcelain holder. (**Note:** Never touch new lamps with your fingers; use a tissue or a cloth. Before removing blown lamp, ensure that the unit is sufficiently cool).

Mount the lamp access hatch again.

Retighten the 2 M4 screws.

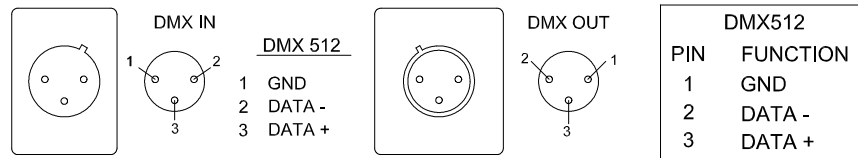
POWER SUPPLY - MAINS



Use the plug provided to connect the mains power to the projector paying attention to the voltage and frequency marked on the panel of the projector. It is recommended that each projector is supplied separately so that they may be individually switched on and off. It is recommended that **the green/yellow must be earthed correctly.**

CONTROL CONNECTIONS

XLR CONNECTORS

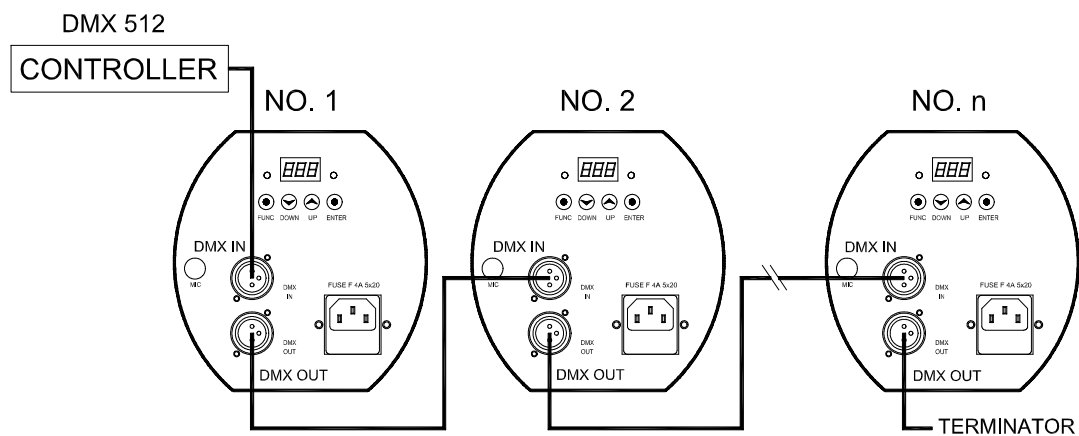


Connection between controller and projector and between one projector and another must be made with 2 core screened cable, with each core having at least a 0.5mm diameter. Connection to and from the projector is via cannon 3 pin XLR plugs and sockets which are included with the projector. The XLR's are connected as shown in the table above.

Note, care should be taken to ensure that none of the connections touch the body of the plug or each other. The body of the plug is not connected in any way. The MOON accepts digital control signals in standard DMX512 (1990) format.

CONNECTING CONTROLLER WITH PROJECTORS

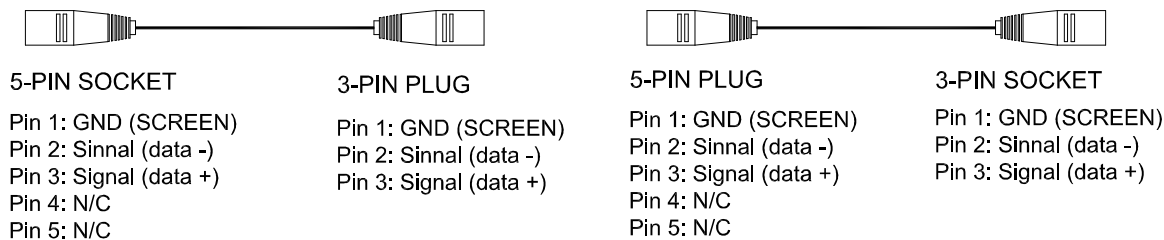
Connect the controller's output to the first fixture's input, and connect the first fixture's output to the second fixture's input. The rest may be deduced by analogy. Eventually connect the last fixture's output to a DMX terminator as shown in the figure below.



In Controller mode, the red LED near the display screen is blinking means the projector is receiving the DMX 512 signal normally.

5-PIN AND 3-PIN CONVERSION

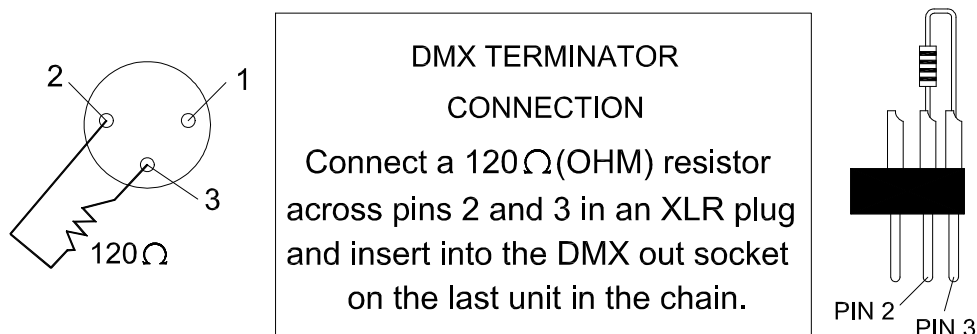
MOON uses 3-pin XLR plug / socket. If your controller uses 5-pin XLR plug / socket, you should convert 5-pin plug / socket into 3-pin socket / plug as shown below.



DMX TERMINATOR

In the Controller mode or Master/Slave mode, the DMX output has to be connected with a DMX terminator at the last fixture in the chain. This prevents electrical noise from disturbing and corrupting the DMX control signals.

The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated in the figure.



SETTING UNIT'S START ADDRESS

Each MOON must be given a DMX start address so that the correct projector responds to the correct control signals. This DMX start address is the channel number from which the projector starts to "listen" to the digital control information being sent out from the controller. The MOON has 7 channels, so set the No. 1 projector's address 001, No. 2 projector's address 008, No. 3 projector's address 015, No. 4 projector's address 022, and so on.

Certainly, you may use formulation: address=channels x (projector No -1) +1

For example, for the No. 4 projector's start address, you should calculate according to formulation: $7 \times (4 - 1) + 1 = 22$, So you set the No. 4 projector start address 022.

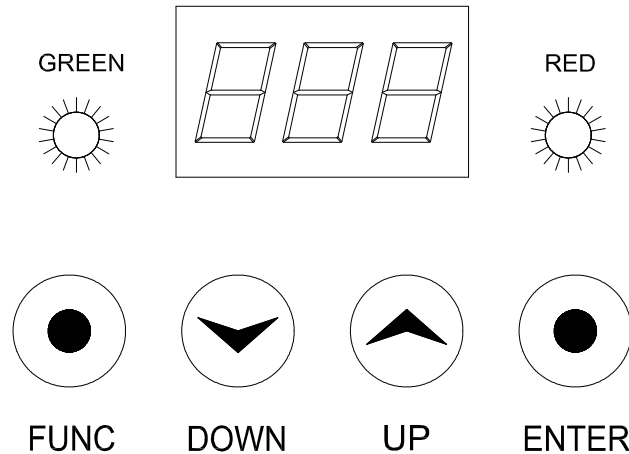
(How to set start address please refer "Operation" section)

DMX CONTROL CHANNEL FUNCTIONS

The MOON uses 7 channels with standard DMX 512 protocol. They are listed in the following table.

CHANNEL	DMX 512 VALUE	DESCRIPTION
1 Colour	0 - 17	White
	18 - 35	Red
	36 - 53	Yellow
	54 - 71	Orange
	72 - 89	Blue
	90 - 107	Green
	108 - 125	Cyan
	126 - 143	Ultraviolet
	144 - 161	Pink
	162 - 177	Light green
	178 - 255	Change of colors from slow to fast till rainbow effect
2 Gobo	0 - 31	Open / Clear
	32 - 63	GOBO 1 (Triangle)
	64 - 95	GOBO 2 (Multi-circle)
	96 - 127	GOBO 3 (Windmill)
	128 - 159	GOBO 4 (Stars)
	160 - 191	GOBO 5 (Flying-swallows)
	192 - 223	GOBO 6 (Three-prong)
	224 - 255	GOBO 7 (Radiation)
3 Shutter/Strobe	0 - 14	Black-out
	15 - 29	Open
	30 - 250	Strobe adjust from slow to fast (1 to 8 flashes per sec.)
	251 - 255	Open
4 Gobo rotation	0 - 4	Stop
	5 - 120	Rotate in opposite-clockwise direction from slow to fast till 114 rpm
	121 - 139	Stop
	140 - 255	Rotate from fast to slow (fastest 114 rpm)
5 Pan	0 - 255	Pan movement from 0 ° to 175 °
6 Tilt	0 - 255	Tilt movement from 0 ° to 80 °
7 Dimmer	0 - 255	Lamp brightness from dark to bright

OPERATION



SETUP OPTIONS - PROJECTOR CONFIGURATION

To browse through the various Setup Options, press the **FUNC** button consecutively. There are 11 option codes (1~9 and A, b), each code has a specific function. The functions provided are listed in the following table.

CODE	CHOICE	FUNCTION
1	Y	Pan inversion enable - Pan is inverted
	N	Pan inversion disable - Pan is normal
2	Y	Tilt inversion enable - Tilt is inverted
	N	Tilt inversion disable - Tilt is normal
3	Y	Sound activation enable
	N	Sound activation disable
4	Y	Automatic programmes enable
	N	Automatic programmes disable
5		Reserved for possible future development
6		Reserved for possible future development
7	Y	Reset enable
	N	Reset disable
8		When enable, colours changing in linear
9		Reserved for possible future development
A		Reserved for possible future development
B		Reserved for possible future development

Once you have selected the desired operation code, press the key **UP** or **DOWN** to select “n” (means OFF) or “y” (means ON). N = ON, Y = YES.

Press the key **ENTER** to save the selected function and configuration. If the display is showing “y”, then the setting has been enabled. In the same way, if it was showing “n” when you pressed **ENTER** the option has been disabled.

The green LED will flash during this operation.

TO SET THE DMX START ADDRESS

The display shows the DMX start address after the projector is switched on (if you have already set the DMX start address and saved it, the screen will display the last setting).

Press the **UP** or **DOWN** buttons to select the required DMX start address in the display.

Confirm your choice by pressing the **ENTER** button.

In Stand-Alone mode, the DMX start address can be set at random.

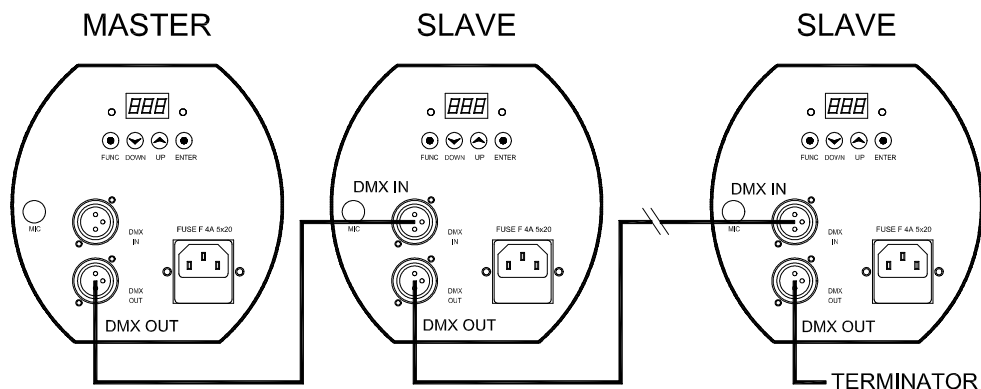
In the Controller and Master/Slave mode, the DMX start address must be set correctly. (Refer to "Controller Connections" and "Master/Slave mode" sections).

MASTER/SLAVE MODE

Without using the controller, many projectors can run synchronously in the Master/Slave mode by linking them with each other.

Select one projector as the master with setting the DMX start address at random. Regard the other projectors as the slaves setting all DMX start address "001".

Connect the master's output to the first slave's input, and connect the first slave's output to the second slave's input. The rest may be deduced by analogy. Eventually connect the last slave's output to a DMX terminator as shown in the figure below.



In the Master/Slave mode, you may run the master via the auto programmes having been set in the master or via sound activation through MIC inside the master, and the slaves will run synchronously with the master.

During operation, you can easily differentiate between the master and the slaves since the master's DMX output without connecting any cable. When auto programmes controlling, the master's red indicator is constant red, but the slaves' indicators are blinking.

STAND-ALONE MODE

Without connecting the controller and the control cable, with the setup option 3 (sound activation) or 4 (auto programmes) enable, the projector will run in Stand-Alone mode.

If you enable a combination of setup options 3 (sound activation) and 4 (auto programmes), the projector will run in auto programmes.

You may set the DMX start address at random in Stand-Alone mode.

CHANGING GOBOS

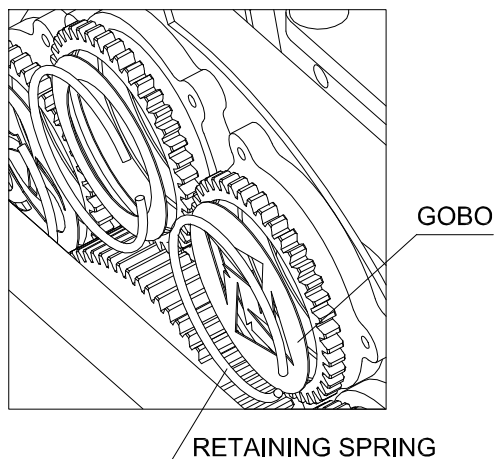
Carefully lift off the upper cover by undoing the 4 M4 screws.

Using a small screwdriver remove the gobo retaining spring.

Insert the gobo into position, and then insert the retaining spring.

Mount the cover again and retighten the 4 M4 screws.

NOTE: It is recommended to add a little adhesive, such as high temperature silicon sealant, to hold securely the retaining spring inside the gear.



LUBRICATION

To ensure the continued smooth rotation of the rotating gobos it is recommended that the bearing for the gobo-pinion is lubricated periodically, preferably every three months. Use only high working temperature low viscosity oil, a syringe with a fine needle is the easiest way to introduce the oil to the bearings around each gobo. Do not over lubricate as this will cause spillage when the wheel rotates.

MAINTENANCE

If the projector's lens becomes damaged or broken it should be replaced. If the lamp becomes damaged or deformed in any way it must be replaced. If the light from the lamp appears dim this would normally indicate that it is reaching the end of its life and it should be changed at once, old lamps run to the extremity of their life can explode. If the projector does not function, check the fuse on the power socket of the projector, they should only be replaced by fuse of the same specified value 4A/250V (fast blow, 5mmx20mm). On the main PCB inside the projector there is also a fuse rated 5A/250V (fast blow, 5mmx20mm). Should these be damaged call a qualified technician before replacement. The projector has thermal protection device that will switch off the projector in case of overheating, should this operate, check that the fans are not blocked, and if they are dirty clean them before switching on the projector again. Check that the fans are operational, if not call a qualified technician.

Any maintenance work should only be carried out by a qualified technician.

KEEPING THE PROJECTOR CLEAN

To ensure the reliability of the projector it should be kept clean. It is recommended that the fans should be cleaned every 15 days. The lens and dichroic colour filters should also be regularly cleaned to maintain an optimum light output. **Do NOT use any type of solvent on dichroic colour filters.**

Cleaning frequency depends on the environment in which the fixture operates: damp, smoke or particularly dirty surroundings can cause greater accumulation of dirt on the unit's optics. A soft cloth and typical glass cleaning products should be used in cleaning. It is recommended to clean the external optics at least once every 20 days and clean the internal optics at least once every 30 / 60 days.

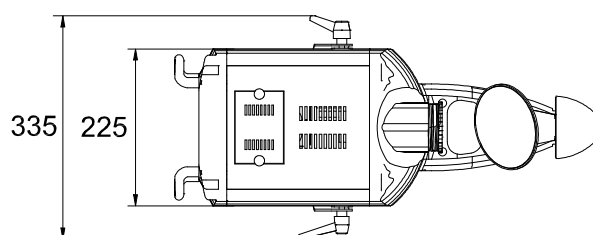
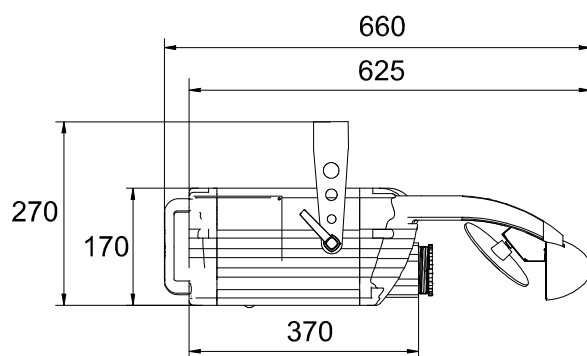
Do not use any organic solvent, e.g. alcohol, to clean the housing of the projector.

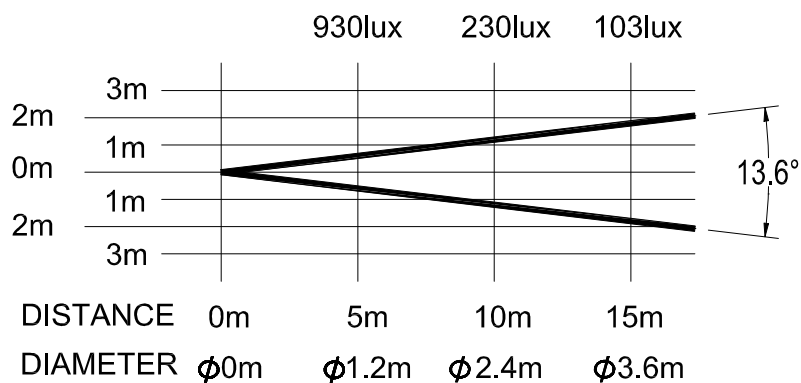
TROUBLESHOOTING

PROBLEM	RESOURCE
The projector does not start	Check the fuse on the socket is blown or not. Check if the lamp is good or not.
The projector switches on but does not answer to commands	Check the projector is correctly configured. Check the XLR cable is good.
The projector only functions intermittently	Check the fan is working and not dirty.
The beam appears dim	Check the lamp is not at the end of its life. Check the optics are clean.
Projection with halo	Carefully clean the lamp and optical group lenses.
Defecting projection	Check the lenses are not broken. Remove dust or grease stored on lenses.

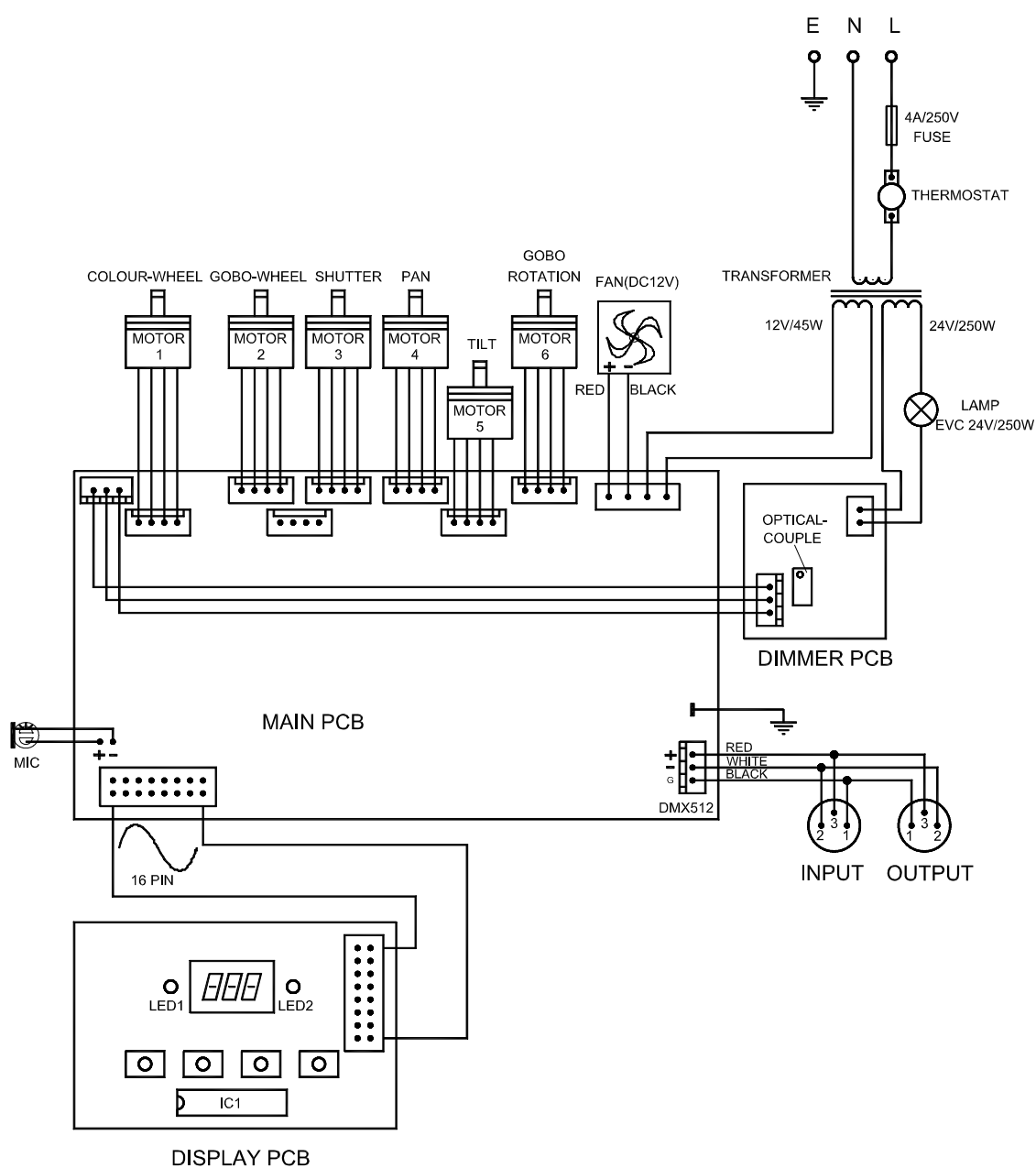
TECHNICAL DATA

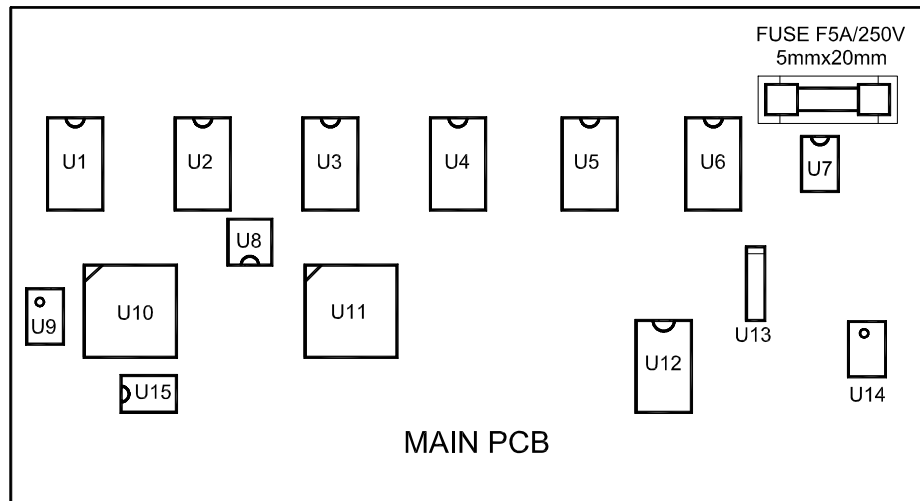
Power supply:	230V AC 50Hz
Optional:	240V, 220V, 200V, 120V, 100V AC 50/60Hz
Power consumption:	280W at 220V
Lamp:	EVC 24V/250W
	Manufacturers Rated Lamp Life: 300 hours
Channels:	7 channels
Signal:	Standard DMX 512
Control mode:	Sound activation, Auto programmes, Controller
Running mode:	Stand-Alone mode, Master/Slave synchro mode, Controller mode
Colours:	9 dichroic colours + white and rainbow effect
Gobos:	7 interchangeable rotating gobos + clear
Shutter/strobe:	Mechanical shutter for blackout and strobe effect, Adjustable from 1 ~ 8 F.P.S.
Beam coverage:	13.6 °
Movement:	Pan movement 175 ° / Tilt movement 80 °
Net weight:	9.4kg
Others:	Lamp brightness adjustable / Auto thermal cut-off / Manual adjustable focus





ELECTRICAL DIAGRAM





COMPONENT ORDER CODES

NAME	PART NO.	REMARK
TRANSFORMER	040020036	230V/50Hz
THERMOSTAT	190010054	95 /10A
FAN	030060008	DC12V/0.43A
LAMP	100040001	EVC 24V/250W
MOTOR 1 (COLOUR-WHEEL)	030040056	17HS0002-45L
MOTOR 2 (GOBO-WHEEL)		
MOTOR 3 (SHUTTER)		
MOTOR 4 (TILT)	030040023	17HS0002-38L
MOTOR 5 (PAN)		
MOTOR 6 (GOBO ROTATION)	030040056	17HS0002-45L
OPTICAL-COUPLE	171000008	MOC3022
IC1	230040093	DIGITAL-SCREEN CHIP
U1~U6	170110001	DRIVER CHIPS
U7	170170039	STABLE-POWER CHIP
U8	230040087	WATCH DOG CHIP
U9	170050002	ARITHMETIC AMPLIFIER CHIP
U10	230040088	MICROPROCESSOR 1
U11	230040089	MICROPROCESSOR 2
U12	170040002	TTL REVERSION CHIP
U13	170170034	RESET CHIP
U14	170170012	BUS CHIP FOR RECEIVING/TRANSMITTING
U15	170040032	EEPROM CHIP

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